

1        ABSTRACT

2    A method of orally immunizing a host organism against gastrointestinal, mucosally-invasive  
3    Mycobacterium avium subspecies paratuberculosis, including the steps of providing an enteric,  
4    mucosally-adherent, non-systemically invasive Mycobacterium avium subspecies  
5    paratuberculosis organism and orally administering the MAP organism to a host animal in an  
6    immunizing dose and manner. Also, a vaccine that includes such a Mycobacterium strain and a  
7    method of developing the strain.